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10/051,185	01/22/2002	Kikuo Ono	HITA.0153	9690

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EXAMINER

DUONG, THOI V

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/051,185

Applicant(s)

ONO ET AL.

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 34-43 ~~is/are~~ are pending in the application.
- 4a) Of the above claim(s) 7-21 ~~is/are~~ are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 34-43 ~~is/are~~ are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is in response to the Amendment filed November 25, 2003.

Accordingly, claims 1, 3-6 and 34-43 were amended, and claims 22-33 were cancelled. Currently, claims 1-21 and 34-43 are pending in this application.

2. Applicant's arguments with respect to claims 1-6 and 34-43 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. **Claims 34, 36, 38, 39 and 41-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Sakamoto et al. (US 2002/0024627 A1).**

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As shown in Figs. 1A and 1B, Sakamoto discloses a liquid crystal display device comprising first and second transparent substrates 101 and 131 and a liquid crystal layer 140 sandwiched therebetween (page 2, paragraph 23),

wherein the first substrate 101 includes a plurality of video signal lines 106a, a plurality of scanning signal lines 102, and a plurality of pixel regions formed as being surrounded by respective neighboring video signal lines and scanning signal lines, and each of the pixel regions includes one active element and one pixel electrode 114, and a light shielding layer 111 laminated by a common electrode 103, the common electrode 103 being arranged above a respective video signal line 106a with an insulation film 110 therebetween, the light shielding layers being made of metal (page 5, paragraph 60), and the common electrodes are being made of a transparent conductive body (page 3, paragraph 26) (claim 34),

wherein the common electrode 103 is laminated to an upper surface of the light shielding layer 111 (claim 36);

wherein the common electrode 103 is superposed on the light shielding layer 111 which is above the video signal line 106a and the common electrode is not superposed on the light shielding layer 111 in display regions between the video signal lines (Fig. 1A) (claim 38);

wherein pixel electrodes 114 in the pixel regions are formed in a comb shape (claim 39);

wherein the insulation film 110 is formed of a resin film containing at least one color filter and positioned along the respective video signal line 106a so as to define a

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boundary (as the light shielding layer 111) between any two neighboring color filters (pages 4 and 5, paragraphs 60 and 61) (claims 41 and 42); and

wherein the light shielding layer 111 is also formed on the scanning signal lines 102 (claim 43).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (US 2002/0024627 A1) in view of Ohta et al. (USPN 5,781,261) and Kim et al. (USPN 5,850,271).**

As shown in Figs. 4A and 4B, Sakamoto et al. discloses a liquid crystal display device comprising:

first and second transparent substrates 401 and 431, and a liquid crystal layer 410 sandwiched therebetween, wherein the first substrate 401 includes a plurality of video signal lines 406a, a plurality of scanning signal lines 402, and a plurality of pixel regions formed as being surrounded by respective neighboring video signal lines and scanning signal lines, each of the pixel regions includes one active element 405, one pixel electrode 414 and at least one color filter 410 (page 2, paragraph 23);

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a boundary between color filters 410 of neighboring pixel regions arranged close to each other in the extending direction of the scanning signal lines 402 and positioned on top of a respective video signal line 406a (claim 1);

common electrodes and common electrode wire 403 functioning as common electrodes formed between said color filter and the liquid crystal layer and superposed on top of the boundary and the respective video signal line 406a (claims 3 and 5),

wherein the common electrodes and common electrode wire also function as light shielding layers (page 5, paragraph 77) (claim 6).

Re claims 1, 2 and 4, Sakamoto et al. discloses all aspects of the instant invention except that the pixel electrode is not formed below the common electrode.

As shown in Fig. 7, Ohta et al. discloses a liquid crystal display comprising a pixel electrode 3 formed on top of a gate insulating film 18, and a common electrode 4 and a light shielding layer 5 formed on top of a passivation layer 19.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display device of Sakamoto et al. with the teaching of Ohta et al. by forming the pixel electrode on top of a gate insulating film so as to simplify the fabricating process and increase productivity (col. 11, lines 6-12). Accordingly, with the modification, the color filter is formed between the pixel electrode and the liquid crystal.

Further, Sakamoto et al. does not discloses a light shielding layer formed between said color filter and the liquid crystal layer and superposed on top of the boundary between color filters. As shown in Fig. 5, Kim et al. discloses a color filter

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panel comprising a light shielding layer 5 formed on top of an organic flattened film 3 (col. 7, lines 1-2) at a boundary between color filters R,G,B and covered by a common electrode 4.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the liquid crystal display device of Sakamoto et al. with the teaching of Kim by forming a light shielding layer below the common electrode between color filter and the liquid crystal layer and superposed on top of the boundary between color filters to reduce resistance of the common electrode and eliminate crosstalk without additional process (col. 2, lines 7-9).

**7. Claims 35 and 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (US 2002/0024627 A1) as applied to claims 34, 36, 38, 39 and 41-43 above in view of Kim et al. (USPN 5,850,271).**

Re claims 35 and 37, Sakamoto et al. discloses a liquid crystal display device that is substantially the same as recited above except for the relative positions of the common electrodes with respect to the light shielding layers.

As shown in Figs. 2, 4 and 5, Kim et al. discloses a color filter substrate comprising common electrode 4 laminated to a lower surface of light shielding layer 5 (Fig. 2) at the boundary portions of color filter 2 in order to reduce sheet resistance of the common electrodes and eliminate crosstalk without additional process due to the electrical connection between the common electrode and the light shielding layer (col. 2, lines 7-65). Accordingly to those figures, the common electrode 4 has a width wider than a width of the light shielding layer 5.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD device of Ohta et al. with the teaching of Kim et al. by laminating the common electrodes to a lower surface of the light shielding layer so as to prevent a picture quality from deteriorating due to crosstalk.

**8. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (US 2002/0024627 A1) as applied to claims 34, 36, 38, 39 and 41-43 above in view of Ohta et al. (USPN 5,781,261).**

Sakamoto et al. discloses a liquid crystal display device that is basically the same as that recited in claim 40 except for pixel electrodes in the pixel regions formed in a comb shape and are formed below respective insulation films. As shown in Fig. 5, Ohta et al. discloses a liquid crystal display device comprising pixel electrodes 3 in the pixel regions formed in a comb shape below insulation films 12 and 19. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Sakamoto et al. with the teaching of Ohta et al. by forming pixel electrodes in the pixel regions in a comb shape below respective insulation films so as to increase productivity (col. 1, lines 40-45).

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

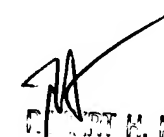
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



02/21/2004



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